What is claimed is:

1. A macroporous hyperhydroxy polymer comprising;

a) 40-60 parts by weight of a purified monoester of a hydroxyalkyl acrylate having a single olefinic double bond,

b) 40-60 parts by weight of an olefinic acid diester containing two olefinic double bonds,

c) up to 5 parts by weight of a polymerization initiator,

wherein the molar ratio of the purified monoester of hydroxyalkyl acrylate to the olefinic acid diester is from 1:1 to 2.3:1, and the polymer is capable of holding 90-99.75% water.

2. The polymer of claim 1 further comprising trace amounts by weight of a longer chain alkyl acrylate or methacrylate ester comonomer.

3. The polymer of claim 1 wherein the monoester is selected from the group consisting of 2-hydroxyethyl methacrylate; glyceryl methacrylate; 2-hydroxypropyl methacrylate; glycidyl methacrylate; 2-hydroxyethyl acrylate and 2-hydroxypropyl acrylate.

4. The polymer of claim 1 wherein the polymerization initiator is a difunctional peroxyester free radical initiator.

5. The polymer of claim 4 wherein the initiator is

selected from the group consisting of 2,5-dimethyl-2,5-bis(2-ethylhexoylperoxy)hexane and tertiarybutyl peroxypivilate.

6. The polymer of claim 1 wherein the initiator is a UV catalyst selected from the group consisting of 2,2-azobis(2-methylpropionitrile) and azoisobutyronitrile (AIBN).

7. The polymer of claim 2 wherein the longer chain comonomer is selected from the group consisting of cyclohexyl methacrylate; trimethylolpropane trimethacrylate and ethyleneglycol dimethacrylate.

8. The polymer of claim 1 wherein the olefinic acid diester is a dimethacrylate.

9. A method of preparing an article from a macroporous hyperhydroxy polymer essentially comprising substantially similar fractions of functional acrylic monomers, which comprises:

a) mixing substantially similar fractions of a purified monoester of a hydroxyalkyl acrylate having a single olefinic double bond and an olefinic acid diester containing two olefinic double bonds with a sufficient amount of a polymerization initiator,

b) holding the mixture under polymerization conditions to form a polymer gel, and

c) casting the polymer gel to shape,

whereby the article is capable of holding 90-99.75% water.

10. The method of claim 9 wherein the monoester is

selected from the group consisting of 2-hydroxyethyl methacrylate; glyceryl methacrylate; 2-hydroxypropyl methacrylate; glycidyl methacrylate; 2-hydroxyethyl acrylate and 2-hydroxypropyl acrylate.

11. The method of claim 9 wherein the olefinic acid diester is a dimethacrylate.

12. The method of claim 9 wherein the initiator is a difunctional peroxyester free radical initiator.

13. The method of claim 9 wherein the initiator is a radiation sensitive catalyst.

14. The method of claim 9 further comprising incorporating a non-reactive diluent in the mixture.

15. The method of claim 9 further comprising incorporating trace amounts of a longer chain alkylacrylate or methacrylate ester comonomer in the mixture.

16. A soft contact lens comprising a macroporous hyperhydroxy polymer prepared by polymerizing a mixture comprising:

a) 40-60 parts by weight of a purified monoester of a hydroxyalkyl acrylate having a single olefinic double bond, and

b) 40-60 parts by weight of an olefinic acid diester containing two olefinic double bonds,

wherein the lens exhibits a water content of from 90-99.75%.

17. The macroporous hyperhydroxy polymer of claim 1 fabricated as a soft contact lens.

18. The macroporous hyperhydroxy polymer of claim 1 produced as a coating.

19. The polymer of claim 1 produced under polymerization conditions as a solid article suitable for further manufacturing.

20. The polymer of claim 1 produced as a coating on other articles.